

Flood Resistant Design and Construction, ASCE/SEI 24-05

Table of Contents

- 1.0 General
 - 1.1 Scope
 - 1.2 Definitions
 - 1.3 Identification of Flood Hazard Areas
 - 1.4 Identification of Flood prone Structures
 - 1.4.1 General
 - 1.4.2 Consideration for Flood Protective Works
 - 1.4.3 Classification of Structures
 - 1.5 Basic Design and Construction Requirements
 - 1.5.1 General
 - 1.5.2 Elevation Requirements
 - 1.5.3 Foundation Requirements
 - 1.5.3.1 Geotechnical Considerations
 - 1.5.3.2 Foundation Depth
 - 1.5.3.3 Foundation Walls
 - 1.5.3.4 Piers, Posts, Columns, or Piles
 - 1.5.4 Use of Fill
 - 1.5.5 Anchorage and Connections
 - 1.6 Loads in Flood Hazard Areas
 - 1.6.1 General
 - 1.6.2 Combination of Loads
-
- 2.0 Basic Requirements for Flood Hazard Areas That Are Not Identified as Coastal High Hazard Areas and Coastal A Zones
 - 2.1 Scope
 - 2.2 Development in Floodways
 - 2.3 Elevation Requirements
 - 2.4 Use of Fill
 - 2.4.1 Structural Fill
 - 2.5 Slabs-on-Grade and Footings
 - 2.5.1 Use of Slabs-on-Grade
 - 2.5.2 Footing Design
 - 2.6 Enclosures Below the Design Flood Elevation
 - 2.6.1 Required Openings in Foundation Walls
 - 2.6.1.1 Openings in Breakaway Walls
 - 2.6.2 Design of Openings
 - 2.6.2.1 Nonengineered Openings
 - 2.6.2.2 Engineered Openings

Flood Resistant Design and Construction, ASCE/SEI 24-05

2006, Softcover, 80 pages, ISBN: 0-7844-0818-1, Stock #40818, List Price \$59, ASCE Member \$44.25

American Society of Civil Engineers, 1801 Alexander Bell Drive, Reston, VA 20191 USA
Phone: 1-800-548-ASCE (2723) or 1-703-295-6300 Fax: 1-703-295-6211 Internet: www.pubs.asce.org

- 3.0 High Risk Flood Hazard Areas
 - 3.1 Scope
 - 3.2 Alluvial Fan Areas
 - 3.2.1 Protective Works in Alluvial Fan Areas
 - 3.3 Flash Flood Areas
 - 3.3.1 Protective Works in Flash Flood Areas
 - 3.4 Mudslide Areas
 - 3.4.1 Protective Works in Mudslide Areas
 - 3.5 Erosion Prone Areas
 - 3.5.1 Protective Works in Erosion Prone Areas
 - 3.6 High Velocity Flow Areas
 - 3.6.1 Protective Works in High Velocity Flow Areas
 - 3.7 Areas Subject to Wave Action
 - 3.7.1 Coastal High Hazard Areas and Coastal A Zones
 - 3.7.2 Other High Velocity Wave Action Areas
 - 3.8 Icejam and Debris Areas
 - 3.8.1 Protective Works in Icejam and Debris Areas

- 4.0 Coastal High Hazard Areas and Coastal A Zones
 - 4.1 Scope
 - 4.1.1 Identification of Coastal High Hazard Areas and Coastal A Zones
 - 4.2 General
 - 4.3 Siting
 - 4.4 Elevation Requirements
 - 4.5 Foundation Requirements
 - 4.5.1 General
 - 4.5.2 Special Geotechnical Considerations
 - 4.5.3 Foundation Depth
 - 4.5.4 Use of Fill
 - 4.5.5 Pile Foundations
 - 4.5.5.1 Attachments to Piles
 - 4.5.5.2 Piles Terminating in Caps at or Below Grade
 - 4.5.5.3 Piles Extending to Superstructure (Structure Framing)
 - 4.5.5.4 Wood Piles
 - 4.5.5.5 Steel H Piles
 - 4.5.5.6 Concrete-Filled Steel Pipe Piles and Shells
 - 4.5.5.7 Prestressed Concrete Piles and Precast Concrete Piles
 - 4.5.5.8 Cast-in-Place Concrete Piles
 - 4.5.6 Pile Design
 - 4.5.6.1 Pile Capacity
 - 4.5.6.2 Capacity of the Supporting Soils
 - 4.5.6.3 Minimum Penetration
 - 4.5.6.4 Foundation Pile Spacing
 - 4.5.6.5 Pile Caps

Flood Resistant Design and Construction, ASCE/SEI 24-05

2006, Softcover, 80 pages, ISBN: 0-7844-0818-1, Stock #40818, List Price \$59, ASCE Member \$44.25

American Society of Civil Engineers, 1801 Alexander Bell Drive, Reston, VA 20191 USA
Phone: 1-800-548-ASCE (2723) or 1-703-295-6300 **Fax:** 1-703-295-6211 **Internet:** www.pubs.asce.org

- 4.5.6.6 Timber Pile Connections
- 4.5.6.7 Steel Pile Connections
- 4.5.6.8 Concrete Pile Connections
- 4.5.6.9 Pile Splicing
- 4.5.6.10 Mixed Types of Piling and Multiple Types of Installation Methodology
- 4.5.7 Posts, Piers, and Columns
 - 4.5.7.1 Wood Posts
 - 4.5.7.2 Reinforced Masonry Columns
 - 4.5.7.3 Reinforced Concrete Columns
- 4.5.8 Footings, Mats, Rafts, and Slabs-on-Grade
- 4.5.9 Grade Beams
- 4.5.10 Bracing
- 4.5.11 Shear Walls
- 4.6 Enclosed Areas Below Design Flood Elevation
 - 4.6.1 Breakaway Walls
 - 4.6.2 Openings in Breakaway Walls in Coastal A Zones
- 4.7 Erosion Control Structures
- 4.8 Decks, Concrete Pads, and Patios
- 5.0 Materials
 - 5.1 General
 - 5.2 Specific Materials Requirements for Flood Hazard Areas
 - 5.2.1 Metal Connectors and Fasteners
 - 5.2.2 Structural Steel
 - 5.2.2.1 Corrosive Environments
 - 5.2.2.2 Noncorrosive Environments
 - 5.2.3 Concrete
 - 5.2.4 Masonry
 - 5.2.5 Wood and Timber
 - 5.2.6 Finishes
- 6.0 Dry and Wet Floodproofing
 - 6.1 Scope
 - 6.2 Dry Floodproofing
 - 6.2.1 Dry Floodproofing Limitations
 - 6.2.2 Dry Floodproofing Requirements
 - 6.2.3 Limits on Human Intervention
 - 6.3 Wet Floodproofing
 - 6.3.1 Wet Floodproofing Limitations on Use
 - 6.3.2 Wet Floodproofing Requirements
- 7.0 Utilities
 - 7.1 General

Flood Resistant Design and Construction, ASCE/SEI 24-05

2006, Softcover, 80 pages, ISBN: 0-7844-0818-1, Stock #40818, List Price \$59, ASCE Member \$44.25

American Society of Civil Engineers, 1801 Alexander Bell Drive, Reston, VA 20191 USA
Phone: 1-800-548-ASCE (2723) or 1-703-295-6300 Fax: 1-703-295-6211 Internet: www.pubs.asce.org

- 7.2 Electrical Service
 - 7.2.1 Service Conduits and Cables
 - 7.2.2 Exposed Conduits and Cables
 - 7.2.3 Electric Meters
 - 7.2.4 Disconnect Switches and Circuit Breakers
 - 7.2.5 Electric Elements Installed Below Minimum Elevations
- 7.3 Plumbing Systems
 - 7.3.1 Buried Plumbing Systems
 - 7.3.2 Exposed Plumbing Systems
 - 7.3.3 Plumbing Systems Installed Below Minimum Elevations
 - 7.3.4 Sanitary Systems
- 7.4 Mechanical, Heating, Ventilation, and Air Conditioning
 - 7.4.1 Tanks
- 7.5 Elevators

- 8.0 Building Access
 - 8.1 General

- 9.0 Miscellaneous Construction
 - 9.1 General
 - 9.2 Decks, Porches, and Patios
 - 9.2.1 Attached Decks, Porches, and Patios
 - 9.2.2 Detached Decks, Porches, and Patios
 - 9.3 Garages
 - 9.3.1 Attached Garages and Carports
 - 9.3.2 Detached Garages and Carports
 - 9.4 Chimneys and Fireplaces
 - 9.5 Pools
 - 9.6 Storage Tanks

- 10.0 References

Commentary

- C1.0 General
- C2.0 Basic Requirements for Flood Hazard Areas That Are Not Identified as Coastal High Hazard Areas and Coastal A Zones
- C3.0 High Risk Flood Hazard Areas
- C4.0 Coastal High Hazard Areas and Coastal A Zones
- C5.0 Materials

Flood Resistant Design and Construction, ASCE/SEI 24-05

2006, Softcover, 80 pages, ISBN: 0-7844-0818-1, Stock #40818, List Price \$59, ASCE Member \$44.25

American Society of Civil Engineers, 1801 Alexander Bell Drive, Reston, VA 20191 USA
Phone: 1-800-548-ASCE (2723) or 1-703-295-6300 **Fax:** 1-703-295-6211 **Internet:** www.pubs.asce.org

- C6.0 Dry and Wet Floodproofing
- C7.0 Utilities
- C8.0 Building Access
- C9.0 Miscellaneous Construction
- C10.0 References

Flood Resistant Design and Construction, ASCE/SEI 24-05

2006, Softcover, 80 pages, ISBN: 0-7844-0818-1, Stock #40818, List Price \$59, ASCE Member \$44.25

American Society of Civil Engineers, 1801 Alexander Bell Drive, Reston, VA 20191 USA

Phone: 1-800-548-ASCE (2723) or 1-703-295-6300 **Fax:** 1-703-295-6211 **Internet:** www.pubs.asce.org